DOCUMENT RESUME

ED 310 378 CS 009 785

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TITLE The Relationship between Study Habits, Attitudes and Orientation among Developmental Freshmen of Kean College.
PUB DATE Dec 89
NOTE 58p.; M.A. Thesis, Kean College.
PUB TYPE Reports - Research/Technical (143) -- Dissertations/Theses - Master Theses (042)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Cognitive Processes; *Cognitive Style; *College Freshmen; Educational Attitudes; Higher Education; *Learning Modalities; Learning Processes; School Surveys; *Study Habits; Study Skills
IDENTIFIERS Kean College of New Jersey; Learning Style Inventory; Survey of Study Habits and Attitudes

ABSTRACT

A study was conducted to determine if visual linguistic numeric, auditory linguistic numeric, and tactile concrete learners have statistically significant different study habits, study attitudes, and study orientation than their low visual linguistic numeric, low auditory linguistic numeric, and low tactile concrete counterparts. Data were collected over two semesters from 154 college freshmen who were classified as developmental freshmen attending Kean College in New Jersey. The Learning Style Inventory (LSI) and the Survey of Study Habits and Attitudes (SSHA) were administered to each participant. In eight of the nine analyses conducted, the mean score of the auditory linguistic numeric, visual linguistic numeric and tactile concrete learners were above their respective counterparts. However, the difference in mean scores between the groups was only statistically significant in the cases of the study habits and study orientation of the visual linguistic numeric versus low visual linguistic numeric learners. High visual linguistic numeric learners exhibit significantly better study attitudes and study orientation. Low visual linguistic numeric learners have better study habits. High tactile concrete learners have better study habits and study orientation, but low tactile concrete learners have better study attitudes. When teachers use the LSI and SSHA, they can provide a basis for helping students improve their study habits, study attitudes, and study orientation. (Twenty-one references, three tables of data, and a copy of the LSI and SSHA are attached.) (MG)

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The Relationship Between Study Habits, Attitudes, and Orientation Among Developmental Freshmen of Kean College

By

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accepted
10/20/89

Presented in partial fulfillment of the requirements
for the Master of Arts Degree
Kean College of New Jersey

December 1989

CS009785

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ABSTRACT

The purpose of this study was to determine if visual linguistic/numeric, auditory linguistic/numeric, and tactile/concrete learners have statistically significant different study habits, study attitudes, and study orientation than their low visual linguistic/numeric, low auditory linguistic/numeric, and low tactile/concrete counterparts. The participants of this study were 154 college freshmen who are classified as Developmental Freshmen attending Kean College of New Jersey.

The Learning Style Inventory (LSI) by Brown and Cooper, and the Survey of Study Habits and Attitudes (SSHA) by Brown and Holtzman was administered to each participant. Data was collected over two semesters and analyzed.

In eight of the nine analyses conducted, the mean score of the auditory linguistic/numeric, visual linguistic/numeric, and tactile/concrete learners were above their respective counterparts. However, the difference in mean scores between the groups was only statistically significant in the cases of the study habits and the study orientation of the visual linguistic/numeric versus low visual linguistic/numeric

learners. The one exception where a non-dominant learning style had superior skills to a dominant learning style was in the auditory linguistic/numeric group. In this group, the low auditory learners had superior study habits to the auditory group. However, virtually all of this difference can be explained by sampling error.

ACKNOWLEDGEMENTS

This thesis is dedicated to my husband, Michael B. Gersten.

I would like to express my appreciation to Dr. Albert Mazurkiewicz and Professor Robert C. Andrews for their assistance throughout this project.

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When a child enters a classroom, a "whole student comes in" (Putnam, 1989). That child differs from other children in terms of language development, mental abilities, and physical and psychological needs. To be an effective teacher, one must be able to recognize the learning style preferences, the study habits, the attitudes, and the orientation of students in a variety of learning situations. By recognizing these differences among students in one's classroom, educators can teach with greater ease, more purpose, and wider flexibility. This is accomplished by tailoring teaching style to meet the needs of students.

Many of the students who enter each freshmen class at Kean College are not academically prepared for the first level college courses. One reason that the admissions department is not able to detect this deficiency, is that freshmen students are not given the New Jersey Basic Skills Placement Test (NJCBSPT) until after they are admitted. As a result, the NJCBSPT can only be used for remedial placement in reading and math courses within the college program.

According to the New Jersey Basic Skills Council (1987), an average of 34% of the incoming freshmen class proved to lack proficiency in verbal skills. The magnitude of this problem has both financial and social implications. On the financial side, vast sums of

money, time, and personnel are expended by the state to bring these students up to the skill level deemed necessary for successful completion of their academic programs. In terms of social ramifications, these basic skills are the fundamental building blocks which underlie all adult learning.

There may be many explanations for the above situation. Among the factors which are believed to contribute to individual students' deficiencies are learning style preferences, study habits, attitudes, and orientation. If specific patterns, tendencies, and similarities can be found among Developmental Freshmen, teaching strategies can be developed to match the learning style needs of these students. These strategies would enable Developmental Freshmen to more rapidly enter mainstream educational programs and achieve academic success.

A topic in contemporary educational research which addresses the differing needs of students is that of "learning styles." Theories on learning styles are based on the idea that in order to provide optimum learning experiences for students, teachers must make some changes in the educational delivery system. Some researchers believe that teachers need to provide more responsive instructional environments based on the

skill differences among learners. Others feel that teachers should help students become more responsive to the existing learning environment by enhancing a student's learning styles to allow for more successful school achievement (Keefe, 1982).

Several definitions of learning styles can be found in educational research. Research in this area supports several branches of theoretical interest and operational models, each stemming from a different perspective on how the human mind operates (Lundstrom and Martin, 1986).

Researchers Brown and Cooper (1983) suggest that learners have very distinct preferences in learning style. Some students have a strong visual orientation, while others have a strong auditory orientation. Some learners are adept at oral expressions, while others are adept at written expression, etc. Brown and Cooper assess three categories of learning styles: cognitive style; social style; and, expressive style.

Researcher Kolb (1985) maintains that learning style is a result of hereditary factors, past experiences, and the demands of the present environment. These factors combine to produce individual orientations that give differential emphasis

to four learning modes: concrete experience; reflective observation; abstract conceptualization; and, active experimentation.

Lundstrom and Martin (1986) investigated the possible interaction between learning style and method of instruction at a midwestern university. It was found that no significant interaction effects occurred between instructional method, and any learning style mode. This was true for both student achievement and student attitude.

In 1985, Shrum conducted a study of learner modality in second language learning at a small, private, liberal arts university. The students' modality strength (visual, auditory, kinesthetic, or mixed) was correlated with Scholastic Aptitude Test measures, grades, and gender. The findings showed that modalities become integrated as students mature.

In 1974 Silverman and Riordan conducted a pilot study with "high risk freshmen" at a midwestern college. The study evaluated a course designed to assist these freshmen in acquiring appropriate study skills, habits, and attitudes. The assumption was made that exposure to the course would positively affect first term grade point averages and test results in the

study skills on the orientation scale of the Survey of Study Habits and Attitudes (SSHA, Brown and Holtzman, 1953). The results indicate that these students did grow in study skills and attitudes and that they also had slightly higher first term grade point averages.

Researchers Cappella, Hetzler, and MacKenzie (1983) conducted a study, also using the SSHA, to determine the effects of positive peer influence on study skills. The subjects of this experiment were 30 on-campus residents of a small college. The result of the experiment indicates that peer influence does have an affect on study behavior. When peer coaction is carried out simultaneously with formal classroom instruction, the students' learning experiences has been shown to profit.

Students' study habits, attitudes, and orientation may play a part either individually, or in combination, with the ability of students to learn. Specifically, students deficient in visual linguistic/numeric, auditory linguistic/numeric, or tactile/concrete learning styles may learn differently than others. If teachers can identify the learning style preferences of these students, they should adapt their teaching style methods appropriately. This may result in teaching with greater ease, more purpose, and wider flexibility by tailoring lessons specifically to meet the needs of

students. It is important, therefore, that these differences, if any, are identified as early as possible.

Hypothesis

It was hypothesized that Developmental Freshmen attending Kean College, when classified as being either above or below the mean in visual linguistic/numeric, auditory linguistic/numeric, or tactile/concrete learning styles, would not differ in study habits, attitudes, or orientation.

Definitions

Developmental Freshmen: Kean College students who have not passed all or part of the New Jersey College Basic Skills Placement Test and are receiving remedial instruction.

New Jersey College Basic Skills Placement Test (NJCBSPT): A statewide proficiency test designed to assist colleges in placing already admitted students into remedial or first-level English or mathematics courses. The basic skills measured by the test are those needed to read college textbooks, to write papers for class, and to solve mathematical problems.

Basic Skills: Those skills of thought and communication that an individual needs not only to take

advantage of the opportunities offered by a college education, but also to become a fully participating member of society. These are "basic skills" of reading, writing, and mathematics that are essential for thinking, learning, and succeeding within the context of a college curriculum.

Verbal Skills: Proficiency on the NJCBSPT in verbal skills is measured by a "Total English" composite score derived from the reading comprehension, sentence sense, and essay tests.

Reading Comprehension: That portion of the NJCBSPT "Verbal Skills" subtest which measures students' ability to understand a written text, to extract the main idea from the text, and to draw appropriate inferences from it.

Learning Style Theory: A topic in contemporary education that recognizes the need for alternative instructional methods and techniques to meet the needs of the variety of students in heterogeneously grouped classrooms.

Learning Style Inventory (LSI): An evaluative instrument designed specifically to determine the

learning style preferences of students. According to authors Brown and Cooper (1983), these preferences are as follows:

1. Auditory Language: The way a student hears words; processing spoken words.
2. Visual Language: The way a student sees words, processing written language.
3. Auditory Numerical: The way a student hears numbers; processing spoken numerical values.
4. Visual Numerical: The way a student sees numbers; processing written numerical values.
5. Tactile/Concrete: The way a student learns by doing or involvement; emphasizing the experiencing or manipulative learning styles.
6. Group Learner: A student who likes to work with at least one other person when there is important work to be done.
7. Individual Learner: A student who works best alone; usually a self-starter, and frequently finds working with other students distracting.
8. Oral Expressive: A student who prefers to say what he knows; answers or explanations usually given orally.
9. Written Expressive: A student who prefers to write down answers or explanations.

10. Visual Linguistic/Numerical: The way a student sees words and numbers; processing written language and processing written numerical values.

11. Auditory Linguistic/Numerical: The way a student hears words and numbers; procesing spoken words and processing spoken numerical values.

Survey of Study Habits and Attitudes (SSHA): An evaluative instrument that measures study methods, motivation for studying, and attitude toward classroom activities. According to authors Brown and Holtzman (1966), these measures are as follows:

1. Delay Avoidance (DA): Promptness in completing academic assignments, lack of procrastination, and freedom from wasteful delay, and distraction.
2. Work Methods (WM): Use of effective study procedures, efficiency in doing academic assignments, and how-to-study skills.
3. Teacher Approval (TA): Opinion of teachers and their classroom behavior and methods.
4. Educational Acceptance (EA): Approval of educational objectives, practices, and requirements.
5. Study Habits (SH): Combines the scores of DA and WM scales to provide a measure of academic behavior.

6. Study Attitudes (SA): Combines the scores of TA and the EA scales to provide a measure of scholastic beliefs.

7. Study Orientation (SO): Combines the scores on the SH and SA scales to provide an overall measure of study habits and attitudes.

Methods and Procedures

The participants of this study were 154 (60 male and 94 female) college freshmen who are classified as Developmental Freshmen. Data was collected over two semesters. The Learning Style Inventory (LSI) and the Survey of Study Habits and Attitudes (SSHA) was administered to each participant.

The objective of this study was to see if auditory linguistic/numeric, visual linguistic/numeric, or tactile/concrete style learners (according to their score on the LSI), differed at a statistically significant level from their low auditory linguistic/numeric, low visual linguistic/numeric, or low tactile/concrete counterparts. To determine this, the population, and their results on the SSHA and LSI, was sorted three times. Each time, the group was ranked from highest to lowest according to their scores on the LSI auditory linguistic/numeric, the LSI visual

linguistic/numeric, and the LSI tactile/concrete factors. The results of these rankings are found on Exhibits B-D on pages 40-42.

Results

In the first comparison, the auditory ranking, Exhibit B was used. A mean auditory score of 53.91 was computed. Students scoring above 53.91 were considered to be high auditory linguistic/numeric learners, and those below this mean were considered as low auditory linguistic/numeric learners. Based on this two group division, mean SSHA habit, attitude, and orientation scores were determined and t-test results are shown on Table One. As can be seen, the greatest difference between the means of the two samples is in the test of orientation, 5.7 points, but the difference is

Table One

Auditory Linguistic/Numeric Learners

	High Auditory		Low Auditory		
	N=88		N=66		
	Mean	SD	Mean	SD	t
Habits	42.72	15.28	42.76	16.78	0.12
Attitudes	49.64	16.32	47.73	14.80	-0.75
Orientation	93.03	27.85	87.33	31.67	-1.19

DF 154

negligible on habits, and less than 2 points on attitudes.

A t-test was run to determine if there was a statistically significant difference between these mean scores. If there was a significant difference, the null hypothesis could be rejected, and it could be said that high auditory linguistic/numeric learners differ in their study habits, study attitudes, or study orientation from their low auditory linguistic/numeric counterparts. None of the t-test results for the auditory linguistic/numeric comparison are above the critical value for large samples of 1.96. This means that although the habits, attitudes, and orientation scores for high auditory linguistic/numeric versus low auditory linguistic/numeric learners do differ, they do not differ at a statistically significant level.

The same procedure was repeated for the visual linguistic/numeric ranking, Exhibit C. A mean visual linguistic/numeric score of 55.66 was computed. Students scoring above 55.66 were considered to be high visual linguistic/numeric learners and those below this mean were considered as low visual linguistic/numeric learners. Based on this two group division, mean SSHA

habit, attitude, and orientation scores were determined. As can be seen in Table Two, a disparity

Table Two

Visual Linguistic/Numeric Learners

	High Visual		Low Visual		
	N=76		N=78		
	Mean	SD	Mean	SD	t
Habits	45.76	15.94	39.79	15.37	-2.37
Attitudes	50.49	15.85	47.19	15.41	-1.31
Orientation	96.13	29.39	85.19	28.14	-2.33

DF 154

of some 6 points (5.97) between the means on the measure of habits, and almost eleven (10.94) points on the measure of orientation, exists and these differences relate to a majority of the sample. The resultant t-test figures indicate that there is a statistically significant difference between the study habits and the study orientation of high visual lingusitic/numeric learners versus low visual linguistic/numeric learners on habits and orientation. However, the t for the study attitudes of visual linguistic/numeric learners does not indicate a statistically significant difference.

The same procedure was repeated a third time for the tactile/concrete ranking, Exhibit D. A mean tactile/concrete score of 26.99 was computed. Students scoring above 26.99 were considered to be high tactile/concrete learners, and those below this mean were considered as low tactile/concrete learners. Based on this two group division, mean SSHA habit, attitude, and orientation scores were determined and shown in Table Three.

As can be seen in Table Three, the greatest

Table Three

Tactile/Concrete Learners

	High Tactile/Concrete		Low Tactile/Concrete		
	N=75		N=79		
	Mean	SD	Mean	SD	t
Habits	43.89	15.52	41.65	16.25	-0.87
Attitudes	49.28	16.19	48.38	15.24	-0.35
Orientation	94.29	27.55	87.08	31.15	-1.52

DF 154

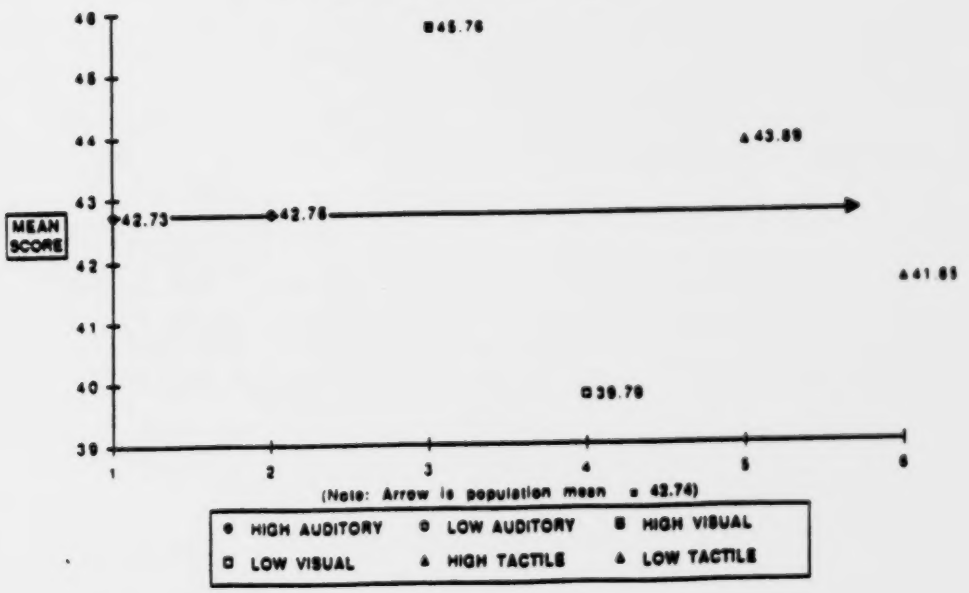
difference between the means of the two samples is in the test of study orientation (7.21), but negligible in the areas of study habits and study attitudes. None of the t-test results for the tactile/concrete comparison were significant.

The mean study habit scores for high auditory, low auditory, high visual, low visual, high tactile/concrete, and low tactile concrete groups are shown below in Figure 1. The horizontal arrow represents the population mean study habit score. The same graphic representation is plotted for study attitude and study orientation scores in Figure 2 and Figure 3, respectively. Note that the mean score, and "y" axis scale differs between exhibits.

These exhibits illustrate that in seven of the nine analyses conducted, the mean score of the auditory, visual, and tactile/concrete linguistic/numeric learners were above their respective counterparts, as shown in Tables One - Three.

SSHA FIGURES

FIGURE 1 - STUDY HABITS



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SSHA FIGURES

FIGURE 2 - STUDY ATTITUDES

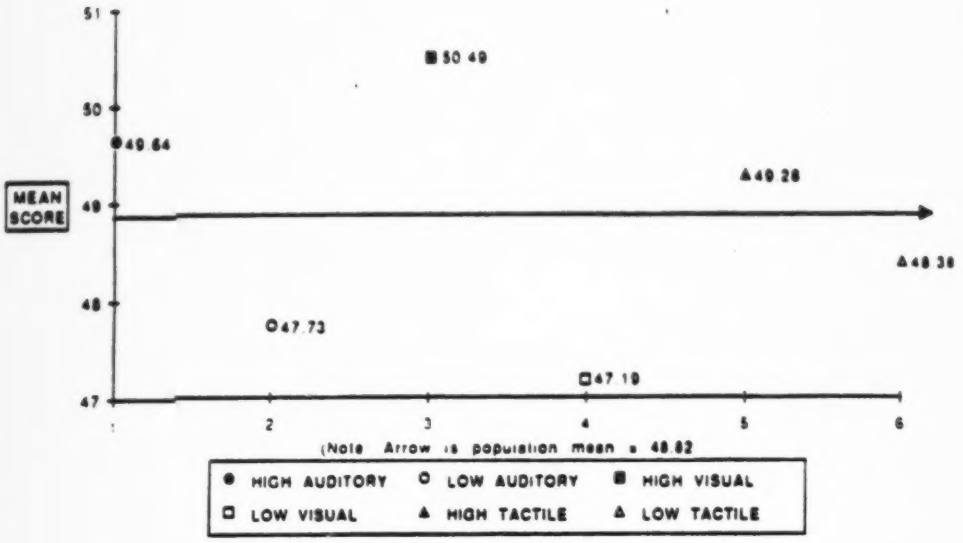
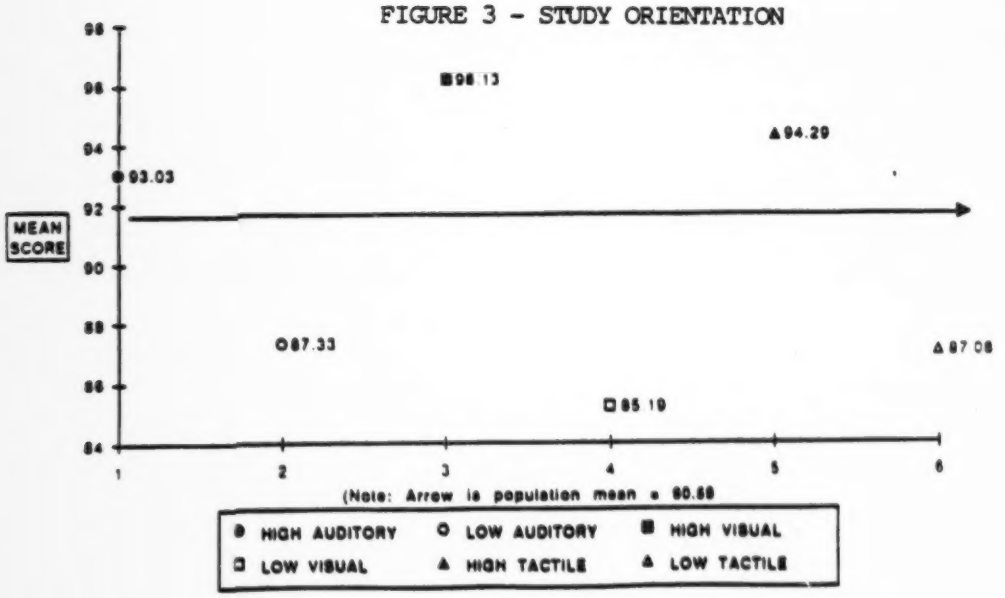


FIGURE 3 - STUDY ORIENTATION



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Discussion

According to the Survey of Study Habits and Attitudes (SSHA), study habits measure academic behavior as it relates to promptness in completing academic tasks and effective use of study procedures. Study attitudes measure students' opinions of teachers and their classroom methods, as well as approval of educational objectives. Study orientation provides an overall measure based on a combination of study habits and study attitudes.

Brown and Cooper, authors of the Learning Style Inventory (LSI), state that auditory learners process spoken words and spoken numbers in a superior fashion to low auditory learners. The same holds true for visual learners, they process written language and written numbers better than their low visual counterparts. Finally, tactile students learn best from involvement or manipulative exercises.

Based on the above definitions from the SSHA, and from the LSI's auditory, visual, and tactile linguistic/numeric learners, a relationship can be seen between the two evaluative instruments that were used for this study. Students who exhibit perceptual strengths in the auditory, visual, or tactile modes might have had better study habits, study attitudes,

and study orientations. As seen in this analysis, this is true of high visual linguistic/numeric learners, and to a lesser extent with the high tactile/concrete learners. The one exception in this study was the case where the low auditory group had slightly better study habits to the high auditory group. In this instance, illustrated in Figure 1, the low auditory students had a mean study habits score of 42.76, which is above the auditory mean study habit score of 42.73. However, by looking at the small t, (0.12; Table One), it is interpreted that 99.07% of this difference can be explained by sampling error.

Conclusions and Implications

The data and subsequent analyses permit the conclusion to be drawn that there is a difference in study habits, study attitudes, and study orientation between the samples classified as above or below the mean in the visual linguistic/numeric, auditory linguistic/numeric, and tactile/concrete learners, but that those differences are statistically not significant for seven of the comparisons.

In two of the nine examinations, the hypothesis that there would be no difference between the samples, cannot be rejected since the differences between the means on those examinations were statistically

significant. High visual linguistic/numeric learners exhibit significantly better study attitudes and study orientation. In the case of the high visual linguistic/numeric and high tactile/concrete learning style samples, study attitudes and study orientation were uniformly higher, but the data of the auditory linguistic/numeric measures indicate only a negligible difference, .03, between the mean study habit scores of the samples, and may be discounted. These samples have similar study habit scores, while their study orientation and study attitude scores differ, though not significantly. Low visual linguistic/numeric learners have better study habits. High tactile/concrete learners have better study habits and study orientation, but low tactile/concrete learners have better study attitudes.

Attention in educational research is becoming increasingly focused on the relationship between student learning styles and other factors, such as study habits, study attitudes, and study orientation. According to Learning Style Inventory authors Brown and Cooper, teachers can address differences in students' learning styles in the following ways:

1. Auditory - These students will benefit from hearing audio tapes, rote oral practice, lecture, or a class discussion. Auditory language learners

may prefer using a tape recorder to make tapes or by conversing with the teacher. Interaction activities, or games for groups of two or more, provide the sound of words being spoken that is so important to pupils with this learning style.

Auditory numerical students will also benefit from math sound tapes, from working with another person, or from talking about a problem. Even reading written explanations aloud will help. These students may prefer tutoring another, or delivering an explanation to a study group, or to the teacher. Important facts should be spoken.

2. Visual - These students will benefit from a variety of books, pamphlets, and written materials on several levels of difficulty. Given some time alone with with a book, visual language students may learn more than in class. Important information should be given on paper. These students must take notes to remember specific information.

Visual numerical learners will benefit from worksheets, workbooks, and texts. Teachers should provide a variety of written materials, and also allow for study time. When playing games and involving students in activities with number

problems, the games and activities should be printed. Important information should be given on paper.

3. Tactile - Tactile students must be given more than just a reading or math assignment. Involve tactile students with at least one other student and give activities that relate to the assignment. Students may prefer to accompany an audio tape with pictures, objects, or an activity such as drawing, or writing, or following directions with physical involvement.

Authors Brown and Holtzman suggest the use of the Survey of Study Habits and Attitudes (SSHA) as a teaching aid. "The SSHA serves as a simple device for getting across to the student certain principles of effective study and the important role of motivational factors in academic success. Where the SSHA is being used for this purpose, students invariably show an interest in their own scores and enjoy a discussion of the results as well as of the items and their scoring." Furthermore, discussions on the personal implications of findings for students may also reduce the number of misunderstandings that arise in student/teacher relationships (Eison and Pollio, 1985). Such

discussions of the interpretation of test scores can help students see their deficiencies and recognize areas for improvement. As a result, with the help of teachers, students can take corrective action to improve upon their weak areas.

What has been determined by this study is that high visual, auditory, and tactile linguistic/numeric learners (with one exception) have slightly better study habits, study attitudes, and study orientation than their low visual, low auditory, and low tactile counterparts, but only two of these were significantly higher. It would appear that the LSI and the SSHA cannot be easily used to aid teachers in addressing the needs of Developmental Freshmen at Kean College. The LSI can be used by teachers to identify students' preferred modalities and teach to those identified strengths. The SSHA should be used by teachers to point out differing principles of effective study among the class members. By so doing, teachers can provide a basis for helping students improve their study habits, study attitudes, and study orientation. Thus, students can fully realize their potential.

Study Habits, Attitudes, and Orientation Among Developmental Freshmen: Related Research

An analysis of the research relating to the subject matter of this thesis led to the following definition of learning style: "Learning style consists of distinctive behaviors which serve as indicators of how a person learns from and adapts to his environment. It also give clues as to how a person's mind operates (Gregorc, 1979)." Applied to education, this means that for a teacher to adequately perform his/her duty, they must be able to assess and understand the learning style characteristics of students. If the assessment is correct, teachers can choose and develop appropriate prescriptive materials for students (Davis and Schwimmer, 1981). Although widespread agreement supports the above definition of learning style, learning style researchers often define the distinctive behaviors among learners differently (Dunn and DeBello, 1981).

Researchers Jerry F. Brown and Richard M. Cooper maintain that learners have very distinct preferences in learning style. Some students have a strong visual orientation, while others have a strong auditory orientation. Some learners are adept at oral expression, while others are adept with written expression, etc. Brown and Cooper assess three categories of learning styles and subdivide them into nine areas. They are as follows:

1. Cognitive Style: The preferred mode of taking in information: auditory language, visual language, auditory numerical, visual numerical, and tactile/concrete.
2. Social Style: The learner's preference as it relates to working in groups or working alone.
3. Expressive Style: The preferred method of giving out information; either the learner prefers to express him/herself orally or in written form.

Researcher David Kolb (1985) maintains that learning style is a result of hereditary factors, past experiences, and demands of the present environment. These factors combine to produce individual orientations that give differential emphasis to four learning modes: concrete experience; reflective observation; abstract conceptualization; and, active experimentation.

Teaching emphasis should be placed on individual awareness of personal learning style and available alternative modes. Knowledge of learning style differences can be used to design instructional experiences, to enhance individual strengths, and to develop non-dominant orientation (Dunn and DeBello, 1981).

Researchers Rita Dunn and Kenneth Dunn (1978) define learning style in terms of four learning conditions and 18 elements. They suggest that learners are affected by the following conditions.

1. Environmental: sound, light, temperature, room design
2. Emotional: motivation, persistence, responsibility, structure
3. Sociological: self-oriented; colleague-oriented; authority-oriented; pair-oriented; term-oriented; varied
4. Physical: perceptual, intake, time, mobility

Researchers Gregorc and Ward (1977) suggest that learning style consists of distinctive, observable behaviors that provide clues to the functioning of people's minds and how they relate to the world. These "mind" qualities mean that people learn in combinations of dualities: (a) concrete-sequential; (b) concrete-random; (c) abstract-sequential; and/or, (d) abstract-random. Individual preferences for a particular set constitutes a learning style.

Gregorc and Ward maintain that strong emphasis is placed on the matching of instructional materials and methods to meet the range of individual preferences. They recommend that selected nonpreferences be utilized at times to encourage students to strengthen those

areas (Dunn and DeBello, 1981).

Lundstrom and Martin (1986) in "Matching College Instruction to Student Learning Style," investigated the possible interaction between learning style and method of instruction at a midwestern university. In their study, the Gregorc Style Delineator was administered to 132 educational psychology students. Students participated in either a self-study or a group interaction lesson, and were assessed on achievement as well as attitude toward method of instruction.

It was found that no significant interaction effects occurred between instructional method, and any learning style mode, for either student achievement or student attitude. These results indicate that college students may be more able than other students to adapt to the demands of various learning environments. These students have experienced and survived many different learning environments over the past 14 or more years. Thus, they have proved able to learn from a variety of instructional methods, regardless of their preferred learning style mode. Furthermore, these results show that matching instruction to student learning style, at least on the college level, may not provide any significant benefits.

Researchers DeBoth and Dominowski (1978) in "Individual Differences in Learning: Visual Versus

Auditory Presentation," investigated the possible interaction of individual differences in learning with mode of presentation. The subjects they chose were 160 college students, who participated to fulfill requirements for an introductory psychology class. Each subject learned 4 test lists of 20 words each, 2 under auditory presentation and 2 under visual presentation.

The findings gave no support for the contention that within a group of learners, one will find auditory learners and visual learners. Rather, the results indicated that one can predict individual differences in learning across presentation modalities as well as within modalities. The researchers suggest maintaining an open mind with respect to the question of whether individual differences in learning interact with presentation modality within any school-age population.

In 1985, Shrum published a research report titled, The Integration of Modalities: Research and Instructional Implications. Shrum conducted a study of learner modality in second language learning at a small, private, liberal arts university. Twenty freshmen in a second-semester Spanish course participated. The students' modality strength (visual, auditory, kinesthetic, or mixed) was correlated with Scholastic Aptitude Test measures, grades, and gender.

The findings showed that modalities become integrated as students mature. Also, Shrum's study reveals that memory strategies, especially chunking, may be a factor when modalities are measured by the Swassing-Barbe Modality Index (SBMI), among college-age subjects.

It is suggested: (1) that teachers consider the use of the SBMI for diagnostic purposes when students have difficulty learning, and (2) that the mismatch between the teacher's preferred mode of presentation and the students' preferred mode of learning can be lessened by reteaching in a different mode, and by varying the mode used from day to day.

Check (1984) presented a study to the National Adult Education Conference in Louisville, Kentucky on Teaching-Learning Preferences of the Adult Learner. This study was conducted to determine theoretical models, learning styles, and activities that adult learners prefer. A total of 154 survey forms were administered to undergraduate and graduate students in adult studies, and in the adult learner course at a midwestern university. A total of 119 questionnaires were analyzed, using a chi square model on all 20 items in the survey. Respondents showed a preference for an eclectic theoretical approach to teaching and learning. These same subjects strongly endorsed learning by "insight", indicating that their favored mode of

learning was through the "lecture and discussion" approach. Furthermore, these same subjects wanted an outline of the lecture prior to the class.

Check's findings showed that adult learners did not prefer a great deal of freedom in choice of course content. The study also revealed that the adult learner takes notes during lectures and accepts the practice of testing. However, a large majority of adults expressed a preference for a test that included both objective and subjective items.

Over the years, educational research has focused attention on students study habits, attitudes, and orientation. These factors may play a part, either individually or in combination, with the ability of students to learn. According to Brown and Holtzman, authors of the Survey of Study Habits and Attitudes (SSHA, 1966), "The fact that some students with apparently high scholastic aptitude do very poorly in school while others with only mediocre ability do well has presented a challenge to many educators."

The SSHA was developed to address this challenge. Brown and Holtzman also believe that, "The purposes of the SSHA are (a) to identify students whose study habits and attitudes are different from those of students who earn high grades, (b) to aid in understanding students with academic difficulties, and

(c) to provide a basis for helping deficient students improve their study habits and attitudes and thus more fully realize their best potentials." If educators can convey certain principles of effective study, as well as identify the learning style preferences of students, they can teach with greater ease, more purpose, and wider flexibility by tailoring lessons specifically to meet the needs of students.

In 1974 Silverman and Riodan conducted a pilot study titled, "Study Skill Training for 'High Risk' Freshmen." This study evaluated the "Success at Mundelein" (SAM), a 12-week non-credit course, designed to assist high risk freshmen in acquiring appropriate study skills, habits, and attitudes. (Note: Mundelein is a college in Illinois). The assumption was made that exposure to the non-credit course would positively affect first term grade point averages, and test results in study skills, on the orientation scale of the Survey of Study Habits and Attitudes (SSHA, Brown and Holtzman, 1953). The subjects were all students originally assigned to the course who subsequently completed it. Of the 26 students assigned to the course, a sample of 12 students was matched with suitable controls.

The study orientation scale of the SSHA was administered to the SAM group at the beginning and end

of the 12-week course. Within a month of the SAM retest, the SSHA was administered to the control group. Both the SAM and control groups were also compared on first term grade point averages.

The results indicated that the SAM group did grow in study skills and attitudes, and that they also had slightly higher first term grade point averages. However, only those students who completed the 12-week course were included in the study. It is possible that these students were more highly motivated than either those who dropped the SAM course or, those like the control group, who never indicated any interest. Possibly, the SAM students were more aware of doing better in college by accepting special help through opportunities such as the SAM program.

Silverman and Riordan recommend that, since a transfer of skills from the SAM course to credit courses was not fully evidenced by a significantly higher grade point average, training methods should be improved to better accomplish this top priority task. Also, high risk students must be better motivated than others to take a more active, interested part in such programs. Methods should be devised to pique the interest of these students, to further encourage them to take part in such programs, and to help them carry the skills gained over into the regular college

classroom.

In 1978, researchers Seni, Gadzella, Goldston, and Zimmerman conducted a study to examine "Differences and Changes of Internally Oriented Students on Study Habits." In this study, perceptions of study habits, for internally oriented subjects who were exposed to effective study techniques, were compared to students who did not have this exposure. The subjects were students enrolled in introductory and educational psychology classes during two different semesters at a large state university. The students were identified as internally oriented based on their responses to the Rotter I-E Scale. The Survey of Study Habits and Attitudes (SSHA) was administered three times during a semester to detect variations between the groups and changes in their study habit skills.

The research revealed that when internally oriented students are not provided with effective study techniques (and are asked to report their study skills), they report progressively lower scores. This may be an indication that they are discouraged, uncertain and/or doubt their study habit skills. On the other hand, internally oriented students who are exposed to effective study techniques (by reading study guides and participating in class discussions) report progressively higher scores over the semester. This

may be an indication that internally oriented students have a better understanding of effective study techniques, concur with the techniques presented and discussed, and/or are more confident in their study habit skills.

Researchers Cappella, Hetzler, and MacKenzie (1983) conducted a study to determine the effects of positive peer influence on study skills. The subjects of this experiment were 30 randomly chosen, on-campus residents of a small college. These students were comprised of pairs of roommates. An experimental group and a control group was established. The Survey of Study Habits and Attitudes (SSHA) was given as a pretest, and again as a post-test, after seven days of experimental conditions.

One roommate was randomly chosen to be a "confederate" within the experimental group. At the completion of the pretest, the experimenter told this roommate that the purpose of the experiment was to determine if positive peer influence affects study behavior. Each confederate was instructed to try to increase the amount of time his or her roommate spent studying by providing a good example of study skills. The experimenter instructed the confederate to model appropriate study skills at a time when his or her roommate was not actively engaged in study, and to

continue encouragement for one hour per day for seven days. Confederates were instructed to keep details of the experiment confidential so as not to bias their roommates' scores on the post-test. The post-test was a re-administration of the SSHA at the conclusion of the seven day period.

The results of this experiment indicated that peer influence does have an affect on study behavior. When peer coaction is carried out simultaneously with formal classroom instruction, the students' learning experience improved.

Annis and Annis (1982) conducted a "Normative Study of Students' Reported Preferred Study Techniques." They investigated the study technique preferences of 914 students in grades 6-8, 10-12, and college level, in order to determine the study techniques actually used by students of those ages. Of all the participants, the 299 college students were enrolled at a large state university.

The researchers went into individual classrooms and distributed a Study Technique Questionnaire. The questionnaire stated: "If you were given a fairly long article to read as part of a reading assignment for this or any other class, exactly how would you go about reading the article? Describe as specifically as possible the study techniques you would use..." The

nine categories of responses were: Read Only; Read and Underline; Read and Notes; Read, Underline, and Notes; Read, Underline or Notes; Read, Underline, Notes or Outline; Read and Outline; Read, Outline or Underline; Read and Mental Notes.

The college students' responses were as follows:

1. Read Only: 13%
2. Read and Underline: 39%
3. Read and Notes: 17%
4. Read, Underline, and Notes: 18%
5. Read, Underline, or Notes: 6%
6. Read, Underline, Notes or Outline: 0%
7. Read and Outline: 0%
8. Read, Outline or Underline: 0%
9. Read and Mental Notes: 0%

The results of this experiment indicate that with increasing grade level, there is an increase in the total number of study techniques used by the students. Also, with increasing grade level, "Read Only" decreases in popularity and is replaced by the study techniques of "Underlining and/or Note Taking." Two possible explanations for these results are: (1) more active involvement and encoding is required by "Underlining and Note Taking," and, (2) increasing influence of individual differences among learners.

In 1978, Davis and Annis conducted research to examine "The Effect of Study Techniques, Study Preferences, and Familiarity on Later Recall." The purpose was to investigate the most effective

techniques for study by manipulating the three most commonly used techniques (Reading Only; Reading combined with Underlining; and, Reading combined with Note Taking) with an assigned preferred or nonpreferred study technique. The subjects were 262 college students enrolled in 13 sections of a sophomore level human growth and development course. After a questionnaire was administered to assess the students' preferred mode of study, the students were assigned to treatment conditions. Half of the subjects were assigned to their preferred method of study and half were assigned to one of their nonpreferred methods of study.

The results indicated that within the "Read" condition, students who preferred reading, and were familiar with the topic, scored significantly better than students who preferred reading, but were unfamiliar with the topic. These same students also scored significantly better than students for whom reading was nonpreferred, but were familiar with the topic. None of the familiarity-preference comparisons within the study conditions of "Underlining" and "Note Taking" was found to be significant.

The results of this study revealed that a student's preferred method of study is very important. In general, the study suggested that the most

effective study techniques are "Underlining" and "Note Taking," which require active involvement. It appears that, at least with college students, it is necessary to take into account several factors when determining the most effective study technique. At the very minimum, the variables of familiarity with the topic, preferred study technique, review, and the kind of examination to be given must be considered.

In sum, research shows that students develop adaptive abilities in college classrooms. Over the years, college students appear to learn to meet the demands of various teaching styles, and to integrate their own personal learning styles. Students' performance in learning may be affected by factors other than classroom experiences, such as schema, information processing skills, and study strategies. Research also revealed that with intervention, students' study skills can be modified when they are exposed to new and/or different study skill techniques. By so doing, students can be better equipped to face the challenges presented to them in college classrooms today.

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EXHIBITS

LEARNING STYLE INVENTORY - AUDITORY LINGUISTIC / NUMERIC

EXHIBIT B

CASE	SEX	LSI Auditory Linguistic / Numeric	SURVEY OF STUDY		
			Habits	Attitudes	Orientation
96	F	72	49	68	117
127	F	71	25	31	56
8	F	67	41	38	79
146	M	65	49	75	124
92	M	64	52	58	110
112	F	64	35	58	93
78	M	64	22	29	51
108	M	63	61	64	125
26	F	63	47	61	108
138	F	63	48	50	90
40	F	62	34	57	91
57	F	62	55	60	115
77	F	62	43	37	80
35	M	62	36	34	70
89	F	62	58	61	119
101	F	62	34	32	66
118	F	62	42	44	86
142	F	61	52	34	86
17	F	61	59	65	124
18	F	61	37	50	87
141	F	61	52	33	126
29	M	61	41	43	84
56	M	61	73	68	141
128	F	61	27	18	95
152	M	61	48	87	135
46	F	60	41	31	72
83	M	60	19	18	37
15	F	60	42	56	98
59	M	60	26	41	67
32	F	60	64	65	129
147	F	60	60	49	109
62	M	60	29	31	60
132	F	59	53	92	125
97	M	59	26	27	53
41	M	59	29	29	58
91	F	59	56	56	112
10	F	58	38	45	83
5	M	58	14	6	20
2	M	58	59	54	103
111	F	58	58	65	123
22	F	58	47	63	110
87	M	58	30	42	72
84	F	58	47	45	92
139	F	58	30	67	97
50	M	58	21	58	79
90	F	57	30	61	97
134	F	57	70	48	118
74	F	57	9	18	27
106	F	57	57	38	95
151	F	57	71	55	126
3	M	57	54	54	108
13	M	57	26	35	63
27	M	57	37	37	74
135	M	57	44	73	117
55	M	57	35	40	75
66	F	56	69	55	121
73	F	56	31	47	78
4	M	56	43	45	98
19	F	56	63	66	129
70	F	56	56	58	114
6	M	56	35	55	90
24	F	56	53	59	112
11	F	56	37	53	90
117	F	55	39	51	90
43	F	55	41	65	106
38	M	55	17	35	52
39	M	55	37	30	67
28	M	55	33	22	55
34	F	55	44	57	101
103	F	55	49	53	102
113	M	55	23	31	54
20	M	55	67	69	136
36	F	55	25	34	59
154	F	54	83	82	165
21	F	54	57	77	134
31	M	54	28	60	98
58	F	54	48	56	105
129	M	54	38	56	94
69	M	54	35	28	63
47	F	54	52	46	98
48	F	54	27	36	63
102	F	54	28	52	80
114	F	54	19	32	51
95	F	54	58	62	120
61	M	54	47	45	92
107	F	54	34	58	92
16	M	54	29	57	86
53	F	54	73	62	135
42	F	53	23	53	76
98	F	53	42	34	76
143	F	53	55	51	106
60	F	53	31	25	56
75	F	53	50	61	111
79	M	52	22	31	53
45	F	52	67	71	138
52	F	52	20	34	54
54	F	52	34	39	73
110	F	52	29	42	71
120	F	52	59	40	99
124	M	51	24	39	63
25	M	51	40	49	89
72	M	51	56	47	103
126	M	51	35	48	83
63	F	51	73	63	136
145	F	51	43	71	114
12	F	51	21	20	4
99	F	51	28	23	51
122	F	51	32	55	87
71	M	51	48	51	99
121	M	51	18	49	67
105	F	50	34	56	90
115	M	50	37	42	79
140	F	50	80	63	143
76	M	50	29	41	70
81	F	50	54	57	111
130	M	50	45	39	84
109	F	50	59	70	129
37	M	50	19	17	36
80	M	49	69	65	134
93	F	49	60	60	110
137	M	49	54	69	123
148	F	49	54	53	107
9	M	49	17	44	61
100	F	49	36	40	76
7	F	49	27	44	71
86	M	49	23	40	73
30	M	49	42	60	102
136	F	48	41	39	80
51	F	48	52	55	107
23	M	48	63	55	118
14	F	48	66	68	134
64	F	48	29	32	61
149	F	48	44	59	103
116	F	48	26	44	70
88	F	48	44	58	102
125	F	47	44	38	82
33	M	47	25	23	48
82	M	46	26	35	61
123	F	46	52	42	94
104	F	46	46	53	99
94	M	46	29	36	65
131	F	46	66	70	136
44	M	45	37	44	81
153	F	44	34	53	87
119	F	42	63	50	113
49	F	42	80	68	15
1	M	40	51	47	30
67	F	39	61	85	146
150	M	39	71	30	131
144	M	39	59	73	132
68	M	39	13	20	33
133	F	39	38	33	71
65	M	37	40	50	90
85	M	36	33	34	67

CASE	SEX	LSI Visual Linguistic / Numeric	SURVEY OF STUDY		
			Habits	Attitudes	Orientation
136	F	80	41	39	80
119	F	80	63	50	113
1	M	80	51	47	30
67	F	74	61	85	146
90	F	73	30	61	97
117	F	73	39	51	90
150	M	71	71	30	131
82	M	70	26	35	61
154	F	69	83	82	165
153	F	69	34	53	87
142	F	66	52	34	86
66	F	66	69	55	121
45	F	66	41	65	106
124	M	66	24	39	63
40	F	65	34	57	91
132	F	65	53	92	125
73	F	65	31	47	78
79	M	65	22	31	53
123	F	65	52	42	94
134	F	63	70	48	118
38	M	63	17	35	52
39	M	63	37	30	67
104	F	63	46	53	99
127	F	62	25	31	56
42	F	62	23	53	76
51	F	62	52	55	107
108	M	61	61	64	125
17	F	61	59	65	124
46	F	61	41	31	72
10	F	61	38	45	83
74	F	61	9	18	27
106	F	61	57	38	95
151	F	61	71	55	126
80	M	61	69	65	134
3	M	60	54	54	108
28	M	60	33	22	55
98	F	60	42	34	76
23	M	60	63	55	118
65	M	60	40	50	90
146	M	59	49	75	124
57	F	59	55	60	115
77	F	59	43	37	80
18	F	59	37	50	87
83	M	59	19	18	37
21	F	59	57	77	134
31	M	59	28	60	98
58	F	59	48	56	105
129	M	59	38	56	94
25	M	59	40	49	89
105	F	59	34	56	90
93	F	59	60	60	110
14	F	59	66	68	134
96	F	58	49	68	117
26	F	58	47	61	108
97	M	58	26	27	53
4	M	58	43	45	98
45	F	58	67	71	138
115	M	58	37	42	79
140	F	58	80	63	143
137	M	58	54	69	123
35	M	57	36	34	70
141	F	57	52	33	126
41	M	57	29	29	58
13	M	57	26	35	63
19	F	57	63	66	129
70	F	57	56	58	114
34	F	57	44	57	101
64	F	57	29	32	61
144	M	57	59	73	132
138	F	56	48	50	90
15	F	56	42	56	98
59	M	56	26	41	67
91	F	56	56	56	112
72	M	56	56	47	103
94	M	56	29	36	65
131	F	56	66	70	136
89	F	55	58	61	119

CASE	SEX	LSI Visual Linguistic / Numeric	SURVEY OF STUDY		
			Habits	Attitudes	Orientation
29	M	55	41	43	84
5	M	55	14	6	20
103	F	55	49	53	102
113	M	55	23	31	54
69	M	55	35	28	63
126	M	55	35	48	83
148	F	55	54	53	107
27	M	54	37	37	74
47	F	54	52	46	98
48	F	54	27	36	63
102	F	54	28	52	80
52	F	54	20	34	54
54	F	54	34	39	73
63	F	54	73	63	136
145	F	54	43	71	114
9	M	54	17	44	61
49	F	54	80	68	15
85	M	54	33	34	67
101	F	53	34	52	66
56	M	53	73	68	141
2	M	53	59	54	103
135	M	53	44	73	117
114	F	53	19	32	51
143	F	53	55	51	106
12	F	53	21	20	4
99	F	53	28	23	51
122	F	53	32	55	87
76	M	53	29	41	70
81	F	53	54	57	111
100	F	53	36	40	76
125	F	53	44	38	82
8	F	52	41	38	79
111	F	52	58	65	123
6	M	52	35	55	90
95	F	52	58	62	120
71	M	52	48	51	99
130	M	52	45	39	84
149	F	52	44	59	103
32	F	51	64	65	129
22	F	51	47	63	110
87	M	51	30	42	72
20	M	51	67	69	136
61	M	51	47	45	92
121	M	51	18	49	67
109	F	51	59	70	129
7	F	51	27	44	71
84	F	50	47	45	92
107	F	50	34	58	92
86	M	50	23	40	73
68	M	50	13	20	33
24	F	49	53	59	112
37	M	49	19	17	36
116	F	49	26	44	70
118	F	48	42	44	86
44	M	48	37	44	81
128	F	47	27	18	95
139	F	47	30	67	97
11	F	47	37	53	90
30	M	47	42	60	102
147	F	46	60	49	109
55	M	46	35	40	75
60	F	46	31	25	56
152	M	45	48	87	135
110	F	45	29	42	71
133	F	45	38	33	71
62	M	44	29	31	60
33	M	44	25	23	48
16	M	43	29	57	86
92	M	42	52	58	110
112	F	42	35	58	93
53	F	42	73	62	135
120	F	41	59	40	99
88	F	41	44	58	102
78	M	38	22	29	51
36	F	38	25	34	59
50	M	36	21	58	79
75	F	32	50	61	111

CASE	SEX	LSI Tactile Concrete	SURVEY OF STUDY Habits	Attitudes	Orientation
120	F	40	59	40	99
25	M	40	40	49	89
83	M	34	19	18	37
132	F	34	53	92	125
27	M	34	37	37	74
135	M	34	44	73	117
34	F	34	44	57	101
96	F	33	49	68	117
41	M	33	29	29	58
60	F	33	31	25	56
92	M	32	52	58	110
29	M	32	41	43	84
79	M	32	22	31	53
51	F	32	52	55	107
127	F	31	25	31	56
108	M	31	61	64	125
141	F	31	52	33	126
56	M	31	73	68	141
59	M	31	26	41	67
84	F	31	47	45	92
19	F	31	63	66	129
24	F	31	53	59	112
20	M	31	67	69	136
47	F	31	52	46	98
48	F	31	27	36	63
61	M	31	47	45	92
42	F	31	23	53	76
80	M	31	69	65	134
137	M	31	54	69	123
94	M	31	29	36	65
146	M	30	49	75	124
35	M	30	36	34	70
118	F	30	42	44	86
142	F	30	52	34	86
128	F	30	27	18	95
106	F	30	57	38	95
73	F	30	31	47	78
70	F	30	56	58	114
28	M	30	33	22	55
21	F	30	57	77	134
31	M	30	28	60	98
114	F	30	19	32	51
107	F	30	34	58	92
45	F	30	67	71	138
124	M	30	24	39	63
72	M	30	56	47	103
115	M	30	37	42	79
130	M	30	45	39	84
9	M	30	17	44	61
100	F	30	36	40	76
123	F	30	52	42	94
26	F	29	47	61	108
152	M	29	48	87	135
15	F	29	42	56	98
32	F	29	64	65	129
91	F	29	56	56	112
10	F	29	38	45	83
50	M	29	21	58	79
90	F	29	30	61	97
151	F	29	71	55	126
3	M	29	54	54	108
66	F	29	60	55	121
4	M	29	43	45	98
6	M	29	35	55	90
110	F	29	29	42	71
126	M	29	35	48	83
140	F	29	80	63	143
14	F	29	66	68	134
119	F	29	63	50	113
85	M	29	33	34	67
54	F	28	34	39	73
97	M	27	26	27	53
5	M	27	14	6	20
2	M	27	59	54	103
65	M	27	40	50	90
8	F	26	41	38	79
77	F	26	43	37	80

CASE	SEX	LSI Tactile Concrete	SURVEY OF STUDY Habits	Attitudes	Orientation
17	F	26	59	65	124
18	F	26	37	50	87
46	F	26	41	31	72
62	M	26	29	31	60
111	F	26	58	65	123
87	M	26	30	42	72
139	F	26	30	67	97
134	F	26	70	48	118
74	F	26	9	18	27
58	F	26	48	56	105
129	M	26	38	56	94
143	F	26	55	51	106
145	F	26	43	71	114
99	F	26	28	23	51
71	M	26	48	51	99
105	F	26	34	56	90
93	F	26	60	60	110
7	F	26	27	44	71
136	F	26	41	39	80
23	M	26	63	55	118
88	F	26	44	58	102
1	M	26	51	47	30
150	M	26	71	30	131
144	M	26	59	73	132
112	F	25	35	58	93
89	F	25	58	61	119
13	M	25	26	35	63
55	M	25	35	40	75
38	M	25	17	35	52
39	M	25	37	30	67
103	F	25	49	53	102
102	F	25	28	52	80
53	F	25	73	62	135
98	F	25	42	34	76
52	F	25	20	34	54
63	F	25	73	63	136
122	F	25	32	55	87
86	M	25	23	40	73
116	F	25	26	44	70
33	M	25	25	23	48
131	F	25	66	70	136
44	M	25	37	44	81
68	M	25	13	20	33
40	F	24	34	57	91
43	F	24	41	65	106
16	M	24	29	57	86
12	F	24	21	20	4
76	M	24	29	41	70
109	F	24	59	70	129
37	M	24	19	17	36
148	F	24	54	53	107
64	F	24	29	32	61
125	F	24	44	38	82
78	M	23	22	29	51
11	F	23	37	53	90
36	F	23	25	34	59
149	F	23	44	59	103
138	F	22	48	50	98
101	F	22	34	52	86
22	F	22	47	63	110
117	F	22	39	51	90
113	M	22	23	31	54
154	F	22	83	82	165
95	F	22	58	62	120
30	M	22	42	60	102
67	F	22	61	85	146
57	F	21	55	60	115
147	F	21	60	49	109
69	M	21	35	28	63
121	M	21	18	49	67
82	M	21	26	35	61
75	F	14	50	61	111
81	F	14	54	57	111
104	F	13	46	53	99
153	F	13	34	53	87
49	F	13	80	68	15
133	F	13	38	33	71

Form C

GRADES 12-14

SSHA

Survey of Study Habits and Attitudes

Brown—Holtzman

Do not open this booklet until you are told to do so. Wait for the examiner's instructions.

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The Psychological Corporation, 304 East 45th Street, New York, N. Y. 10017

Printed in U.S.A. 65-312TB

R—RARELY S—SOMETIMES F—FREQUENTLY G—GENERALLY A—ALMOST ALWAYS

1. When my assigned homework is extra long or unusually difficult, I either quit in disgust or study only the easier parts of the lesson.
2. In preparing reports, themes, term papers, etc., I make certain that I clearly understand what is wanted before I begin work.
3. I feel that teachers lack understanding of the needs and interests of students.
4. My dislike for certain teachers causes me to neglect my school work.
5. When I get behind in my school work for some unavoidable reason, I make up back assignments without prompting from the teacher.
6. Difficulty in expressing myself in writing slows me down on reports, themes, examinations, and other work to be turned in.
7. My teachers succeed in making their subjects interesting and meaningful to me.
8. I feel that I would study harder if I were given more freedom to choose courses that I like.
9. Daydreaming about dates, future plans, etc., distracts my attention from my lessons while I am studying.
10. My teachers criticize my written reports as being hastily written or poorly organized.
11. I feel that teachers allow their personal like or dislike for a student to influence their grading unduly.
12. Even though I don't like a subject, I still work hard to make a good grade.
13. Even though an assignment is dull and boring, I stick to it until it is completed.
14. I give special attention to neatness on themes, reports, and other work to be turned in.
15. I believe that the easiest way to get good grades is to agree with everything your teachers say.
16. I lose interest in my studies after the first few days of a new semester.
17. I keep all the notes for each subject together, carefully arranging them in some logical order.
18. I memorize grammatical rules, definitions of technical terms, formulas, etc., without really understanding them.
19. I think that teachers like to exercise their authority too much.
20. I believe that teachers truly want their students to like them.
21. When I am having difficulty with my school work, I try to talk over the trouble with the teacher.
22. I hesitate to ask a teacher for further explanation of an assignment that is not clear to me.
23. I feel that teachers are too rigid and narrow-minded.
24. I feel that students are not given enough freedom in selecting their own topics for themes and reports.
25. I lay aside returned examinations, reports, and homework assignments without bothering to correct errors noted by the instructor.
26. I get nervous and confused when taking an examination and fail to answer questions to the best of my ability.
27. I think that teachers expect students to do too much studying outside of class.
28. Lack of interest in my school work makes it difficult for me to keep my attention focused on assigned reading.
29. I keep my place of study business-like and cleared of unnecessary or distracting items such as pictures, letters, mementos, etc.
30. I have trouble with the mechanics of English composition.
31. When explaining a lesson or answering questions, my teachers use words that I do not understand.
32. Unless I really like a course, I believe in doing only enough to get a passing grade.
33. Telephone calls, people coming in and out of my room, "bull-sessions" with my friends, etc., interfere with my studying.

GO ON TO THE NEXT PAGE.

R—RARELY S—SOMETIMES F—FREQUENTLY G—GENERALLY A—ALMOST ALWAYS

34. In taking notes, I tend to take down material which later turns out to be unimportant.

35. My teachers fail to give sufficient explanation of the materials they are trying to teach.

36. I feel confused and undecided as to what my educational and vocational goals should be.

37. It takes a long time for me to get warmed up to the task of studying.

38. I do poorly on tests because I find it hard to think clearly and plan my work within a short period of time.

39. I feel that teachers are overbearing and conceited in their relations with students.

40. Some of my courses are so uninteresting that I have to "force" myself to do the assignments.

41. I am unable to concentrate well because of periods of restlessness, moodiness, or "having the blues."

42. I skip over the figures, graphs, and tables in a reading assignment.

43. I believe that teachers secretly enjoy giving their students a "hard time."

44. I believe that having a good time and getting one's full share of fun out of life is more important than studying.

45. I put off writing themes, reports, term papers, etc., until the last minute.

46. After reading several pages of an assignment, I am unable to recall what I have just read.

47. I think that teachers tend to talk too much.

48. I believe that teachers tend to avoid discussing present-day issues and events with their classes.

49. When I sit down to study I find myself too tired, bored, or sleepy to study efficiently.

50. I have difficulty in picking out the important points of a reading assignment—points that later appear on examinations.

51. I feel that teachers try to distribute their attention and assistance equally among all their students.

52. I feel that my grades are a fairly accurate reflection of my ability.

53. I waste too much time talking, reading magazines, listening to the radio, watching TV, going to the movies, etc., for the good of my studies.

54. When in doubt about the proper form for a written report, I refer to an approved model to provide a guide to follow.

55. The illustrations, examples, and explanations given by my teachers are too dry and technical.

56. I feel that it is not worth the time, money, and effort that one must spend to get a college education.

57. My studying is done in a random, unplanned manner—is impelled mostly by the demands of approaching classes.

58. When reading a long textbook assignment, I stop periodically and mentally review the main points that have been presented.

59. I feel that teachers tend to be sarcastic towards their poorer students and to ridicule their mistakes excessively.

60. Some of my classes are so boring that I spend the class period drawing pictures, writing letters, or daydreaming instead of listening to the teacher.

61. "Extracurricular activities"—dating, clubs, athletics, fraternity and sorority activities, etc.—cause me to get behind in my school work.

62. I seem to accomplish very little in relation to the amount of time I spend studying.

63. I feel that teachers make their courses too difficult for the average student.

64. I feel that I am taking courses that are of little practical value to me.

65. I utilize the vacant hours between classes for studying so as to reduce the evening's work.

66. I can concentrate on a reading assignment for only a short while before the words become a meaningless jumble.

67. I think that football coaches contribute more to school life than do the teachers.

GO ON TO THE NEXT PAGE.

R—RARELY S—SOMETIMES F—FREQUENTLY G—GENERALLY A—ALMOST ALWAYS

68. I believe that the sole purpose of education should be to equip students to make a living.

69. Problems outside of school—financial difficulties, being in love, conflict with parents, etc.—cause me to neglect my school work.

70. I copy the diagrams, drawings, tables, and other illustrations that the instructor puts on the blackboard.

71. I feel that teachers think too much about grades and lose sight of the real objectives of education.

72. I strive to develop a sincere interest in every course I take.

73. I complete my homework assignments on time.

74. I lose points on true-false or multiple-choice examinations because I change my original answer only to discover later that I was right the first time.

75. I think that students who ask questions and offer comments in class are only trying to impress the teacher.

76. The prestige of having a college education provides my main motive for going to college.

77. I like to have a radio, record player, or television set turned on while I'm studying.

78. When preparing for an examination, I arrange facts to be learned in some logical order—order of importance, order of presentation in class or textbook, order of time in history, etc.

79. I believe that teachers intentionally schedule tests on the days following important athletic or social activities.

80. I believe that a college's football reputation is just as important as its academic standing.

81. With me, studying is a hit-or-miss proposition depending on the mood I'm in.

82. I am careless of spelling and the mechanics of English composition when answering examination questions.

83. I believe that one way to get good grades is by using flattery on your teachers.

84. I think that it might be best for me to drop out of school and get a job.

85. I study three or more hours per day outside of class.

86. Although I work until the last possible minute, I am unable to finish examinations within the allotted time.

87. I feel that it is almost impossible for the average student to do all of his assigned homework.

88. I feel that the things taught in school do not prepare one to meet adult problems.

89. I keep my assignments up to date by doing my work regularly from day to day.

90. If time is available, I take a few minutes to check over my answers before turning in my examination paper.

91. I feel that the ridiculous assignments made by teachers is the main reason for student cheating.

92. Prolonged reading or study gives me a headache.

93. I prefer to study my lessons alone rather than with others.

94. When tests are returned, I find that my grade has been lowered by careless mistakes.

95. I feel that students cannot be expected to like most teachers.

96. I feel like cutting classes whenever there is something I'd rather do or whenever I need to cram for a test.

97. At the beginning of a study period I organize my work so that I will utilize the time most effectively.

98. During examinations I forget names, dates, formulas, and other details that I really do know.

99. I believe that teachers enter their profession mainly because they enjoy teaching.

100. I believe that grades are based upon a student's ability to memorize facts rather than upon the ability to "think" things through.

LEARNING STYLES INVENTORY

EDUCATIONAL ACTIVITIES, INC.
FREEPORT, NY 11520

1983 Activity Records, Inc.

Name _____ Class _____

	Most Like Me			Least Like Me
20. I learn best when I study alone.	(4)	(3)	(2)	(1)
21. When I have a choice between reading and listening, I usually read.	(4)	(3)	(2)	(1)
22. I would rather tell a story than write it.	(4)	(3)	(2)	(1)
23. Saying the multiplication tables over and over helped me remember them better than writing them over and over.	(4)	(3)	(2)	(1)
24. I do my best work in a group.	(4)	(3)	(2)	(1)
25. I understand a math problem that is written down better than one I hear.	(4)	(3)	(2)	(1)
26. In a group project, I would rather make a chart or poster than gather the information to put on it.	(4)	(3)	(2)	(1)
27. Written assignments are easy for me to follow.	(4)	(3)	(2)	(1)
28. I remember more of what I learn if I learn it alone.	(4)	(3)	(2)	(1)
29. I do well in classes where most of the information has to be read.	(4)	(3)	(2)	(1)
30. I would enjoy giving an oral report to the class.	(4)	(3)	(2)	(1)
31. I learn math better from spoken explanations than written ones.	(4)	(3)	(2)	(1)
32. If I have to decide something, I ask other people for their opinions.	(4)	(3)	(2)	(1)
33. Written math problems are easier for me to do than oral ones.	(4)	(3)	(2)	(1)
34. I like to make things with my hands.	(4)	(3)	(2)	(1)
35. I don't mind doing written assignments.	(4)	(3)	(2)	(1)
36. I remember things I hear better than things I read.	(4)	(3)	(2)	(1)
37. I learn better by reading than by listening.	(4)	(3)	(2)	(1)
38. It is easy for me to tell about the things that I know.	(4)	(3)	(2)	(1)
39. It makes it easier when I say the numbers of a problem to myself as I work it out.	(4)	(3)	(2)	(1)
40. If I understand a problem, I like to help someone else understand it too.	(4)	(3)	(2)	(1)
41. Seeing a number makes more sense to me than hearing a number.	(4)	(3)	(2)	(1)
42. I understand what I have learned better when I am involved in making something for the subject.	(4)	(3)	(2)	(1)
43. The things I write on paper sound better than when I say them.	(4)	(3)	(2)	(1)
44. I find it easier to remember what I have heard than what I have read.	(4)	(3)	(2)	(1)
45. It is fun to learn with classmates, but it is hard to study with them.	(4)	(3)	(2)	(1)

LEARNING STYLES INVENTORY

1983 Activity Records Inc

EDUCATIONAL ACTIVITIES, INC.
FREEPORT, NY 11520

Name _____ Class _____

Instructions: Read the statement carefully and circle the number which best agrees with how you feel about the statement.

Sample: I would rather do work in the afternoon than in the morning. (4) (3) (2) (1)

A number "4" response means that you prefer to work in the afternoon. A response of "1" means that you very much prefer to work in the mornings. There is no right or wrong response, only the way you feel about the statement. You may have all the time you need so please respond to every statement. Now, if there are no other questions, go on with the survey.

	Most Like Me			Least Like Me
1. Making things for my studies helps me to remember what I have learned.	(4)	(3)	(2)	(1)
2. I can write about most of the things I know better than I can tell about them.	(4)	(3)	(2)	(1)
3. When I really want to understand what I have read, I read it softly to myself.	(4)	(3)	(2)	(1)
4. I get more done when I work alone.	(4)	(3)	(2)	(1)
5. I remember what I have read better than what I have heard.	(4)	(3)	(2)	(1)
6. When I answer questions, I can say the answer better than I can write it.	(4)	(3)	(2)	(1)
7. When I do math problems in my head, I say the numbers to myself.	(4)	(3)	(2)	(1)
8. I enjoy joining in on class discussions.	(4)	(3)	(2)	(1)
9. I understand a math problem that is written down better than one that I hear.	(4)	(3)	(2)	(1)
10. I do better when I can write the answer instead of having to say it.	(4)	(3)	(2)	(1)
11. I understand spoken directions better than written ones.	(4)	(3)	(2)	(1)
12. I like to work by myself.	(4)	(3)	(2)	(1)
13. I would rather read a story than listen to it read.	(4)	(3)	(2)	(1)
14. I would rather show and explain how a thing works than write about how it works.	(4)	(3)	(2)	(1)
15. If someone tells me three numbers to add, I can usually get the right answer without writing them down.	(4)	(3)	(2)	(1)
16. I prefer to work with a group when there is work to be done.	(4)	(3)	(2)	(1)
17. A graph or chart of numbers is easier for me to understand than hearing the numbers said.	(4)	(3)	(2)	(1)
18. Writing a spelling word several times helps me remember it better.	(4)	(3)	(2)	(1)
19. I learn better if someone reads a book to me than if I read it silently to myself.	(4)	(3)	(2)	(1)